IN THE DRAWINGS:

Applicant has filed herewith a replacement drawing sheet bearing Figs. 3A and 3B. In the replacement of Fig. 3A, reference number "350" has been changed to "351." No other change to Figs. 3A and 3B has been made. No new matter is entered by this amendment.

Applicant has filed herewith a replacement drawing sheet bearing Fig. 7. In the replacement of Fig. 7, reference number "620" has been changed to "621." No other change to Fig. 7 has been made. No new matter is entered by this amendment.

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## REMARKS

This is a full and timely response to the non-final Official Action mailed **July 27, 2006.** Reconsideration of the application in light of the following remarks is respectfully requested.

### Claim Status:

In the originally-filed set of claims, the claims were misnumbered in that no claim numbered 54 was presented. Consequently, the claims have been appropriately renumbered herein to total 56.

Claims 5, 31 and 40-56 were withdrawn from consideration under the imposition of a previous Restriction Requirement. Consequently, claim 40-56 have been cancelled by the present paper. These withdrawn claims are cancelled without prejudice or disclaimer. Applicant reserves the right to file any number of continuation or divisional applications to the withdrawn claims or to any other subject matter described in the present application.

Withdrawn claims 5 and 31 are subject to rejoinder upon the allowance of their respective independent claims. MPEP § 821.04

By the present amendment, various claims have been amended. In addition to the withdrawn claims cancelled above, claims 32-34 have been cancelled without prejudice or disclaimer. New claims 57 and 58 have been added. Consequently, claims 1-4, 6-30, 35-39, 57 and 58 are currently pending for further action.

### Drawings:

The recent Office Action objected to the figures because reference number "350" and "620" had each been used twice to refer to two different elements. Consequently, Applicant has filed herewith replacement drawing sheets bearing Figs. 3A, 3B and 7. In Fig. 3A, reference number "350" has been changed to "351." In Fig. 7, reference number "620" has been changed to "651." No other change to the drawings has been made. No new matter is entered by this amendment. Therefore, following entry of this amendment, the objection to the drawings should be reconsidered and withdrawn.

The specification has also been amended, where appropriate, to correspond to these changes made in Figs. 3A and 7.

35 U.S.C. § 112, Second Paragraph;

The recent Office Action rejected claims 4, 7-9, 12, 14, 15, 19-30 and 32-39 under 35 U.S.C. § 112, second paragraph. Applicant addresses the various parts of this rejection as follows.

Claim 4 was rejected due to a lack of antecedent basis for the phrase "said air profiling manifold." Consequently, claim 4 has been amended to depend from claim 3 which provides antecedent basis for the feature in question. Therefore, following entry of this amendment, the rejection under § 112 of claim 4 should be reconsidered and withdrawn.

The other claims rejected under § 112 are considered indefinite for including the terms "distal" and "proximal" when referring to the ends of various claimed elements. According to the Office Action, such terms are indefinite. Applicant respectfully disagrees.

The terms "distal" and "proximal" are used in the claims to label particular ends of various claimed elements to facilitate further reference to those element portions. Thus, the terms "distal" and "proximal" have clear antecedent basis and definition within each claim where they are used and thus help to distinguish the various portions of the claimed elements relative to other portions of the claimed elements. Therefore, it is unclear how these terms are indefinite. To the contrary, the use of these terms in the claims renders the claims more definite.

Applicant also notes the large number of previous patents (nearly one hundred thousand) in which the terms "distal" and "proximal" are used in the claims. For at least these reasons, the remainder of the rejection under § 112 should be reconsidered and withdrawn.

Prior Art:

Claims 1 and 19 were rejected as being anticipated under 35 U.S.C. § 102(e) by U.S. Patent App. Pub. No. 2004/0157096 to Peterson ("Peterson"). For at least the following reasons, this rejection is respectfully traversed.

First, Applicant notes that the present application was filed October 1, 2003, one day before the filing on October 2, 2003 of the Peterson application. Consequently, Peterson is not necessarily valid prior art against the present application. Peterson claims priority to an earlier provisional application filed October 7, 2002. However, until the Office demonstrates on the record that the subject matter relied on in Peterson was present in the earlier provisional, the rejection based on Peterson has no weight.

Moreover, even if the rejection based on Peterson is eventually substantiated, Peterson still fails to teach or suggest all the features of claims 1 and 19. Specifically, claim 1 recites:

> An integrated fuel cell stack and catalytic combustor apparatus, comprising:
> a fuel cell stack assembly having *multiple fuel cell stacks between which is defined a cavity*;
> each of said fuel cell stacks including a plurality of individual fuel cells; and
> a catalytic combustor *disposed at least partially within said cavity*, said catalytic combustor having a catalytic bed and a catalytic igniter.

(Emphasis added).

Thus, claim 1 recites a catalytic combustor disposed at least partially in a cavity that is defined *between* multiple fuel cell stacks of a stack assembly.

In contrast, Peterson teaches a catalytic combustor 20 that "can be integrated directly into the SOFC 14 exhaust section to burn residual fuel." (Peterson, paragraph 0031, as cited by the Office Action of 7/27/06, p. 5). This is not a teaching of what claim 1 actually recites as highlighted above. Peterson does not teach or suggest a cavity defined *between* multiple fuel cell stacks of a stack assembly and "a catalytic combustor disposed at least partially within said cavity."

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least these reasons, the rejection of claim 1 and its dependent claims based on Peterson should be reconsidered and withdrawn.

Independent claim 19 recites:

> An integrated fuel cell stack and catalytic combustor assembly, comprising:
> a frame;
> a fuel cell stack assembly comprising multiple fuel cell stacks coupled to said frame, said fuel cell stack assembly having opposing fuel cell stacks wherein is defined a cavity;
> each of said fuel cell stacks including a plurality of individual fuel cells each having an anode, a cathode, and an electrolyte; and
> a catalytic combustor disposed at least partially within said cavity *such that a fuel channel is defined in a space between said catalytic combustor and said fuel cell stacks*, and wherein said catalytic combustor includes a catalytic bed and a catalytic igniter

(Emphasis added).

In contrast, as demonstrated above, Peterson teaches a catalytic combustor 20 that is integrated "directly" into the exhaust of a fuel cell. (Peterson, paragraph 0031, as cited by the

Office Action of 7/27/06, p. 5). Consequently, Peterson does not teach or suggest the claimed fuel channel defined in a space between the catalytic combustor and the fuel cell stacks. There is no fuel channel in Peterson that is defined in a *space between* the catalytic combustor and the fuel cell stacks.

Again, "[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least these reasons, the rejection of claim 19 and its dependent claims based on Peterson should be reconsidered and withdrawn.

In an alternative rejection, the Office Action rejected claims 1-4, 6, 7, 9-30, 32, 33 and 35-39 under 35 U.S.C. § 103(a) over the combined teachings of Peterson and U.S. Patent No. 5,413,879 to Domeracki et al. ("Domeracki"). This rejection fails for the same reasons as the Peterson rejection discussed above.

Domeracki teaches, in Fig. 3, an exhaust plenum combustion chamber 7 that is connected to an exhaust from a stack of fuel cells 50. According to Domeracki, "[a]s shown in FIG. 3, a number of tubular solid oxide fuel cells 50 extend into the reaction chamber 57 through holes 62 in a plate 55 *that separates the reaction chamber from the exhaust plenum combustion chamber 7*." (Domeracki, Fig. 3 and col. 3, lines 40-44).

With regard to claim 1, Domeracki, like Peterson, fails to teach or suggest a cavity defined *between* multiple fuel cell stacks of a stack assembly and "a catalytic combustor disposed at least partially within said cavity." Rather, according to Domeracki, a plate 55 separates the reaction chamber from the combustion chamber 7. (*Id.*). Thus, this subject matter of claim 1 is not taught by either Domeracki or Peterson.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). For at least these reasons, the rejection of claim 1 and its dependent claims based on Domeracki and Peterson should be reconsidered and withdrawn.

With regard to claim 19, Domeracki, like Peterson, does not teach or suggest the claimed fuel channel defined in a space between the catalytic combustor and the fuel cell stacks. There is no fuel channel in Domeracki that is defined in a *space between* the catalytic combustor and the fuel cell stacks. For at least these reasons, the rejection of claim 19 and its dependent claims based on Domeracki and Peterson should be reconsidered and withdrawn.

Additionally, various dependent claims of the application recite subject matter that is further patentable over the prior art of record. Specific, non-exclusive examples follow.

Claim 2 recites "a fuel flow channel defined in space between said catalytic combustor and said fuel cell stacks." This is clearly patentable over the applied prior art for the same reasons given above with respect to claim 19.

Claim 3 recites "further comprising a cathode air profiling manifold disposed around said fuel cell stacks such that an air flow to said fuel cell stacks is made more equal by said air profiling manifold." Support for the amendments to claim 3 can be found in Applicant's originally filed specification at, for example, paragraph 0031. This subject matter is not taught or suggested by the prior art of record.

Claim 4 recites "wherein said air profiling manifold comprises an outer skin and an inner profiling skin having a plurality of holes enclosing said fuel cell stacks." Support for the amendments to claim 4 can be found in Applicant's originally filed specification at, for example, Fig. 1 and the accompanying text. Similar subject matter is recited in claim 29. This subject matter is not taught or suggested by the prior art of record.

Claim 11 recites "a plurality of pass through holes defined in said shell of said catalytic combustor, said plurality of holes serving as inlets for said catalytic combustor." Support for the amendments to claim 11 can be found in Applicant's originally filed specification at, for example, paragraph 0025. This subject matter is not taught or suggested by the prior art of record.

Claim 14 recites "wherein said catalytic bed has a catalytic profile varying between a higher catalytic coefficient at a distal end of said catalytic combustor and a lower catalytic coefficient at a proximal end." Claim 36 recites similar subject matter. This subject matter is not taught or suggested by the prior art of record.

Claim 26 recites: "The assembly of claim 25, in which said igniter wire assembly, a non-active ceramic portion of said integrated fuel cell stack and catalytic combustor, said catalytic core, and said cathode air profiling skin provide electrical routing from the cells out while still allowing said cathode air profiling skin to surround a electrochemically active surface." This subject matter is not taught or suggested by the prior art of record.

For at least these additional reasons, the rejection of each of the claims discussed above should be reconsidered and withdrawn.

Claims 8 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of the combined teachings of Domeracki, Peterson and U.S. Patent App. Pub. No.

2002/0102445 to Senner ("Senner"). This rejection is respectfully traversed for at least the same reasons given above with respect to claims 1 and 19.

Conclusion:

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

DATE: October 26, 2006

Steven L. Nichols
Registration No. 40,326

Steven L. Nichols, Esq.
Managing Partner, Utah Office
**Rader Fishman & Grauer PLLC**
River Park Corporate Center One
10653 S. River Front Parkway, Suite 150
South Jordan, Utah 84095
(801) 572-8066
(801) 572-7666 (fax)

**CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being transmitted to the Patent and Trademark Office facsimile number 571-273-8300 on October 26, 2006. Number of Pages: 24

Rebecca R. Schow